Puget Sound Steelhead Recovery Team
November 14, 2014 Meeting Summary
10:00 am – 3:00 pm

Decisions and Actions from Meeting

Decision	Notes
1. Accepted the September 23rd meeting summary as final, with edits.	
2. Approved the letter to the Recovery Council, with edits.	Shared with Recovery Council at the November 20th meeting.

Action	Assignment
1. Continue making progress that can be reported to full Recovery Team at next meeting.	Each workgroup
2. Keep the Recovery Team updated about when and how the Recovery Goals & Scenarios Workgroup will be reaching out to local watersheds for the modeling effort.	Joe Anderson
3. Work with Michael Schmidt to identify when is a good time to report back more to the Recovery Team about early marine survival research. Also forward the product from the October 27th workshop to the Recovery Team, when ready.	Joe Anderson
4. Draft November 14th meeting summary and send follow-up packet with PowerPoint presentations.	Elizabeth Babcock & Claire Turpel

Welcome and Introductions

Elizabeth Babcock welcomed participants and led introductions (*see end for a list of participants*). The Puget Sound Steelhead Recovery Team (Recovery Team) reviewed the agenda and there were no changes. The Recovery Team reviewed the September 23rd meeting summary and some members suggested edits to clarify information captured in the summary. With those changes, the Recovery Team accepted the summary as final.

Presentations: Steelhead Hatchery and Harvest Updates

Note: PowerPoints will be sent to Recovery Team members in a separate email and are available upon request.

Hatchery Management Update – Tim Tynan from NOAA's Sustainable Fisheries Division made a presentation regarding hatchery management of Puget Sound steelhead under the Endangered Species Act (ESA) to the Recovery Team. Some points and discussion from his presentation include:

- There are 14 steelhead hatchery programs currently operating in the Puget Sound region: nine are integrated with native stocks and five are localized non-native stock.

- NMFS is the regulatory agency for hatchery actions, not the management agency responsible for hatchery program implementation. The co-managers (the Treaty Tribes and the Washington Department of Fish & Wildlife (WDFW)) are the entities proposing and implementing hatchery programs affecting listed salmon and steelhead. The co-managers need take authorization from NMFS (outlined in the ESA) in order to conduct hatchery-related activities that affect listed fish.
- With ESA-listed fish conservation, treaty rights stewardship and the Magnuson-Stevens Act are important mandates that NMFS applies in its evaluation and determination processes for Puget Sound hatcheries.
- It was noted that the Recovery Team has a challenge to create a Recovery Plan that includes hatcheries that are already in operation.
- Key issues of concern in NMFS steelhead hatchery effects reviews are facility operation, broodstock collection, natural spawning by hatchery steelhead, and ecological effects.
- When evaluating steelhead conservation hatchery ("integrated") programs, NMFS considers the adequacy of rearing operations, genetic effects, and performance of the programs in meeting stated objectives.
- Genetic effects are the marquee issue for management of integrated and segregated hatchery steelhead programs.
- To gauge the genetic effects, NMFS is particularly interested in the extent to which naturally spawning hatchery steelhead from segregated programs produce both hatchery-hatchery (HxH) and hatchery-wild (HxW) progeny.
- Proportion effective hatchery contribution (PEHC) is the key metric that will be used by NMFS to gauge the extent to which segregated program hatchery steelhead are affecting associated natural populations genetically. The need to adjust a hatchery steelhead program will be based on this estimated level of flow.

Harvest Management Update – Amilee Wilson from NOAA's Sustainable Fisheries Division presented to the Recovery Team about harvest management of Puget Sound steelhead. Some points and discussion from her presentation include:

- Historically, the steelhead harvest was noted as a contributing factor to the listing of steelhead. However due to the elimination of directed harvest in the mid-1990s, harvest was no longer considered a contributing factor at the time of the 2007 Puget Sound steelhead listing. Co-managers requested harvest coverage under the Chinook Management Plan and NOAA approved the first steelhead harvest ESA authorization in 2011. Subsequent ESA authorization has been approved for steelhead harvest since 2011.
- Those historical numbers only included winter run steelhead, not summer run. And the data was taken almost exclusively from direct fisheries (natural origin steelhead), not indirect fisheries (where some steelhead are captured amongst other species).
- Based on available data, total average harvest rates on natural-origin steelhead from 2007-08 to 2012-13 are less than half the estimated harvest rates examined at the time of listing. Thus, harvest does not appear to pose a challenge to the recovery of Puget Sound steelhead at this time.
- Some recovery challenges include:
    - Data are limited for steelhead populations, particularly for summer run steelhead.
    - Any potential change in listing may create more harvest challenges resulting from ESA harvest coverage restrictions.

  - NMFS is currently doing the 5-year status review, and that could affect the current listing of steelhead. If steelhead move to a more series listing status, it would automatically trigger Section 10 (a)(1)(A) or (a)(1)(B) of the ESA.
  - Harvest authorizations go hand-in-hand with hatchery authorizations. For example, ESA approval of Chambers Creek winter run steelhead hatchery programs will dictate available hatchery steelhead for harvest in Puget Sound.
- Due to NMFS's regulatory status (instead of a management agency), NMFS can only assess the biological aspects, not tell co-managers how to conduct their fisheries. However, NMFS encourages co-managers to develop RMPs on a DPS-level and will work with co-managers to provide guidance on how management plans can meet the criteria for ESA authorization.
- The Skagit watershed is working on a rebuilding exploitation rate (RER), which could result in a specific harvest rate for only that watershed. This work may result in submittal of a separate steelhead harvest plan under the ESA 4(d) Rule on behalf of the Skagit River co-managers.

Discussion

- Compared to the previous Puget Sound recovery plans, NMFS will likely take a more decision-making role for the steelhead recovery planning.
- It was suggested that the Recovery Team use one map that integrates harvest, habitat, and hatchery, because otherwise the three might use different levels of acceptable risk.
- A Recovery Team member noted the need for transparency, especially since hatchery management influences harvest. There are also other things that influence demands on local watersheds.

Recovery Plan Outline – NMFS had put together an initial draft form of the Recovery Plan for the Recovery Team to review. While the outline was incomplete in many sections, the goal for this meeting was to review the outline together and begin changing/editing as needed, and also identify volunteers to work on different sections. The Recovery Team walked through the outline and added/edited several parts (see updated Recovery Plan outline for specific changes). Other discussion points included:

- The deadline for a complete Recovery Plan is estimated to be 2017. However, the outline is already developed so that it just becomes the Recovery Plan as it gets more filled out. This will help the Recovery Team track progress over time.
- If implementation of other recovery plans is not being executed in the way the Recovery Team expected, the Team can note that in this Recovery Plan. The idea is to use this Recovery Plan as a fresh opportunity to look at the DPS.
- The Recovery Team noted that Recovery Plans often are a direct influence on funding, and they agreed to be sensitive to that when drafting the Plan.
- It was noted that if no one from a local watershed steps up to write the local chapter, NMFS would be the default drafter of local chapters.
- The point of the Watershed Appendices is to have stand-alone documents also serve as watershed recovery chapters.
- The Recovery Team finished their first edit. The Recovery Team will revisit this Recovery Plan in future meetings and continue to add/edit information.

Comparing Open Standards and Recovery Plan Outline – Tristan Peter-Contesse shared with the Recovery Team a crosswalk comparing the steps of Open Standards with the Recovery Plan. He reviewed the crosswalk for the Recovery Team and encouraged them to suggest any edits to either process so they are comprehensive. The discussion included:

- The first two Open Standards steps are not included in the crosswalk because they outline how to define the team and other logistical work.
- Monitoring and adaptive management is designed to be built into the system.
- Once the Recovery Plan is more detailed, the Recovery Team can crosswalk the Open Standards with the Plan again. This might be in February or March, 2015.

Workgroup Progress Reports – Each of the three workgroups shared updates and progress since the September 23rd Recovery Team meeting.

- Recovery Goals & Scenarios Workgroup
    - The post-doctoral position was posted and the application period closed in early November. Now they are reviewing applications and hope to start the hiring process soon. The applicant pool was strong with diverse people. Some have specific experience with salmonids.
    - Once the post-doc is hired, the workgroup assumes there will be at least three meetings for local watershed experts to share information that could help the modeling effort.
        - If needed, the workgroup could meet with local people to also talk about the Recovery Plan outline.
        - The workgroup is looking to meet with local biologists and other technical people who do fish surveys.
    - PSP asked to be kept updated about what this workgroup will ask of local watershed groups so that they can help coordinate work and be clear to the local watersheds about what is being asked of them.
        - Joe Anderson will keep the Recovery Team updated about when local meetings are happening to talk about the modeling effort.
        - The workgroup understands they will need to be clear about the specific questions and endpoints they want to get to, so the local watershed people's time is most efficiently used.
    - It was noted that the group of local experts that the workgroup talks might end up being a wider group than originally anticipated.
- Watershed Template Workgroup
    - The workgroup met recently and discussed the draft watershed template (especially the sections of the template), and a portfolio of elements from the Hood Canal pilot project that can be used for this effort.
    - The workgroup discussed what else to add to the watershed chapters based on the overall outline of the Recovery Plan.
    - The "summary of hypotheses" in the watershed chapters will be linked to the results chains from the Open Standards work.
- Stresses & Pressures Workgroup
    - No updates since the September 23rd Recovery Team meeting.

Letter to Recovery Council – The Recovery Team reviewed a letter they had previously drafted; it is intended to be shared with the Salmon Recovery Council so the local watersheds can know more about the Steelhead Recovery Team's efforts and progress. The discussion included:

- There are some watersheds eager to get started on work to recover steelhead in their area. The two known watersheds are Skagit and West Sound (Kitsap), and Puyallup might also be interested. West Sound has a habitat assessment project funded through the Salmon Recovery Funding Board.
- Knowing that some watersheds are eager to get started, but recognizing the time it will take for the Recovery Team to develop comprehensive guidance for watersheds to apply steelhead recovery planning consistently, the Team discussed ways to communicate that in the letter.

Decision: The Recovery Team finalized the letter and agreed to send it in this form to the Salmon Recovery Council.

Steelhead Early Marine Survival Research – Joe Anderson shared information from a workshop that Michael Schmidt from Long Live the Kings put together a workshop on steelhead early marine survival. He summarized several presentations from the workshop describing very preliminary research findings, with full reports expected to be available in June 2015. The research studies included:

- Retrospective Analyses
    - Acoustic telemetry data for the full Puget Sound
        - Smolts were tagged at fish traps and then detected at receivers throughout the Sound. Work was done primarily 2006-2009.
    - Analyzing smolt-to-adult data (total marine survival)
        - Evaluated trends, assessed smolt characteristics, and assessed environmental predictors.
    - Identified predators of juvenile steelhead in the marine environment
        - Assessed steelhead migration schedules and avian/mammalian predators.
- Field studies from 2014
    - Reciprocal transplant experiment of acoustically tagged steelhead smolts
        - Marine survival was found to be strongly correlated with release location. It was found that the migration route is more influential than the genetic background.
        - Mortality was found to be a function of the total distance traveled.
        - Preliminary data were inconsistent with the "dinner bell hypothesis" (the idea that mortality of acoustically tagged steelhead is increased by transmitting auditory cues to predators).
    - Evaluate interactions between harbor seals and acoustically tagged steelhead smolts
        - Outfitted 12 harbor seals with equipment to detect information about steelhead and their habits.
        - They found that seals had interesting diving patterns (e.g., diving deep and staying there).
    - Genome wide association study of acoustically tagged steelhead smolts
        - Acoustically tagged steelhead were fin clipped at the smolt trap and DNA sequenced. Data will be used to identify specific regions of the genome that are associated with survival vs. mortality.

  - Puget Sound-wide fish health assessment
    - Took wild and hatchery fish from Skagit, Snohomish, Green, Nisqually, and Tahuya watersheds to assess overall health.
    - No *Nanophyetus* (trematode parasite) signal in Skagit, Snohomish, or Tahuya. *Nanophyetus* found in Green and Nisqually systems.
    - Some fish had low lipid levels. The level could mean malnutrition, but that is being further investigated.
- The Recovery Team appreciated these updates and asked to have another update about more research projects, maybe in 3-6 months. Joe Anderson will work with Michael Schmidt to see when more can be reported back to the Recovery Team. Joe will also look to share the product from that workshop.

Wrap Up & Next Steps

- Travel reimbursements are available for non-NOAA employees to submit to Triangle for any Recovery Team meeting.
- For now, Recovery Team members should hold both December 19 and January 23 on their calendars. More information will be shared soon about the December meeting.
  - A member noted that as much as possible, it would be great to have time at Recovery Team meetings to build relationships amongst the team members.
- Recovery Team members were encouraged to share photos of steelhead, which can be taken anywhere.

Participants

Participant	Affiliation
Joe Anderson	Washington Department of Fish & Wildlife
Elizabeth Babcock	NOAA's National Marine Fisheries Service
Susan Bishop	NOAA's National Marine Fisheries Service
Ed Connor	Seattle City Light
Ned Currence	Nooksack
Ken Currens	Northwest Indian Fisheries Commission
Jeanette Dorner	Puget Sound Partnership
Jeff Hard	Northwest Science Center
Steve Leider	NOAA's National Marine Fisheries Service
Randy McIntosh	NOAA's National Marine Fisheries Service
Susan O'Neil	Long Live the Kings
Tristan Peter-Contesse	Puget Sound Partnership
David Price	Washington Department of Fish & Wildlife
Tim Tynan	NOAA's National Marine Fisheries Service
Amilee Wilson	NOAA's National Marine Fisheries Service
Claire Turpel	Triangle Associates